

Module 1: Basic Microbiology

Duration: 7 days

1. Introduction to Microbiology and Aseptic Techniques
 - a. Basic Microbiology-Theory
 - b. Theory of Aseptic Techniques
2. Biochemical calculations
 - a. Molarity
 - b. Normality
 - c. Serial Dilution
 - d. Percent solutions
 - e. Dilution
3. Bacterial staining Techniques
 - a. Gram staining -Positive and Negative staining
 - b. Endospore staining
4. Preparation and sterilization of media
 - a. Information on general media
 - b. Calculation of media ingredients to suit an experiment
 - c. Preparation of media
 - d. Sterilization of media
5. Plating, streaking and inoculation of *E. coli*
 - a. Development of Overnight culture (ONC)
 - b. Developing a single colony on suitable plates-streak plate method
 - c. Plating of ONC
6. Bacterial growth curve
 - a. Inoculation of single colony to develop ONC
 - b. Using the ONC for bacterial growth curve
7. Zone of inhibition and Minimum Inhibitory Concentration (MIC) of compounds
 - a. Developing ONC
 - b. Preparation of plates
 - c. Dilution of samples to be tested
 - d. Plating of cultures for MIC and Zone of Inhibition